

**ABSTRACT**

A system and method are described for secure data transfer over a network. According to an exemplary embodiment a system for secure data transfer over a network includes memory and a memory controller configured to transfer data received from the network to the memory. The system includes a processor, having logic configured to  
5 retrieve a portion of the data from the memory using the memory controller. The processor also includes logic configured to perform security operations on the retrieved portion of the data, and logic configured to store the operated-on portion of the data in the memory using the memory controller. The memory controller is further configured to  
10 transfer the operated-on portion of the data from the memory to the network.